UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/672,204	09/28/2000	Ted Chongpi Lee		8791

46363	7590	06/05/2006

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ART UNIT	PAPER NUMBER
2157	

DATE MAILED: 06/05/2006

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PTO-90C (Rev. 10/03)

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Application Number: 09/672,204
Filing Date: September 28, 2000
Appellant(s): LEE ET AL.

Eamon J Wall (reg no 39,414,)
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed March 21, 2006 which corrected a non-compliant

appeal brief filed November 22, 2004 appealing from the Office action mailed April 20, 2004.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

No evidence is relied upon by the examiner in the rejection of the claims under appeal.

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

1.   **Claims 1-3,7-10 and 12-23 rejected under 35 U.S.C. 102(b) as being anticipated by**

Morley et al. (CCBR, Optimal Loading of SONET BLSRs, June 1998).

2.   In reference to claim 1, Morley teaches the method comprising the steps of:

determining a first circuit path between a source node and a destination node in a

Synchronous Optical Network (SONET) ring comprising a plurality of nodes interconnected by

links (pg 1 paragraph 2, pg 2 paragraph 1 lines 13-14 & paragraph 5 lines 1-3 and pg 5 paragraph

2 lines 3-4 & paragraph 3 lines 3-5, Morley discloses determining a path between two nodes on a

SONET ring comprising a plurality of nodes interconnected by spans)

each of said links having associated with it a plurality of facilities, each of said facilities

having associated with it a respective bandwidth utilization level (pg 2 paragraph 1 lines 13-14,

pg 3 paragraph 1 lines 1-4 and pg 4 paragraph 4 lines 4-5, Morley discloses each span has a line

capacity c, and each span can be a four fiber BLSR span. The four fibers (i.e. *facilities*) also have

a capacity c because the fibers define the span),

said facilities having bandwidth utilization levels exceeding a first threshold level are not

used to define said first circuit path (pg 1 paragraph 3, pg 2 paragraph 1 lines 13-14, and pg 3

paragraph 1 lines 1-4 & paragraph 3 lines 3-5, Morley discloses and if the total bandwidth

demand on any span exceeds the threshold capacity c then that path and direction is not used, and

another path in the opposite direction is subsequently used).

3.   In reference to claim 2, Morley teaches the method of claim 1, further comprising the

step of:

selecting a second circuit path in the opposing direction to said first circuit path where

facilities having bandwidth utilization levels below a first threshold level in said first path can

not be found for a Bi-directional Line Switched Ring (BLSR) (pg 1 paragraphs 2-3, pg 2

paragraph 1 lines 13-14 and paragraph 5 lines 1-3, and pg 3 paragraph 1 lines 1-4 and paragraph

3 lines 3-5, Morley discloses not choosing a span if its load exceeds capacity c, in a SONET

BLSR network. The network has clockwise and counter-clockwise routing directions. If one

direction is not chosen, then the other direction is selected as the routing path if it satisfies the

load conditions).

4.   In reference to claim 3, Morley teaches the method of claim 1, further comprising the

step of:

Adjusting said threshold level where the bandwidth utilization levels of facilities in said

second path exceed said first threshold level (pg 4 paragraphs 1-3 and pg 5 paragraphs 2-3,

Morley discloses capacity c as a variable which can be adjusted).

5.   In reference to claim 7 Morley teaches a method comprising the steps of:

selecting a path between a source node and a destination node, said path comprising at

least two intervening nodes coupled by at least one respective link, where said link has

associated with it respective facilities; selecting one of said facilities within each of said at least

one link for placing service on; and determining whether a respective bandwidth utilization level

for each selected facility within said circuit path is below a first threshold (pg 1 paragraphs 2-3,

pg 2 paragraph 1 lines 13-14 & paragraph 5 lines 1-3, and pg 3 paragraph 1 lines 1-4 &

paragraph 3 lines 3-5, and pg 4 paragraph 4 lines 4-5).

6.   In reference to claim 8, Morley teaches the method of claim 7, further comprising the

step of:

Altering the direction of said circuit path, responsive to a negative determination that

within at least one link of said path no facilities exist having respective bandwidth utilization

levels below said first threshold level for a Bi-directional Line Switch Ring (BLSR) (pg 1

paragraphs 2-3, pg 2 paragraph 1 lines 13-14 and paragraph 5 lines 1-3, and pg 3 paragraph 1

lines 1-4 and paragraph 3 lines 3-5).

7.   In reference to claims 9 and 10, Morley teaches the method of claim 8, further

comprising the step of:

Adjusting said threshold level where the bandwidth utilization levels of facilities in said

second path exceed said first threshold level (pg 4 paragraphs 1-3 and pg 5 paragraphs 2-3).

8.   In reference to claims 12, Morley teaches a method comprising the steps of:

a) selecting a path between a source node and a destination node, said path comprising at

least one link; b) selecting a facility within each of said link connecting the source node to the

destination node; c) determining the bandwidth utilization level for each facility within each link;

d) rejecting said facility in the case of said respective bandwidth utilization level being above a

threshold level; and e)repeating steps b) through d) until a circuit path is determined which meets

said threshold level (pg 1 paragraphs 2-3, pg 2 paragraph 1 lines 13-14 & paragraph 5 lines 1-3,

and pg 3 paragraph 1 lines 1-4 & paragraph 3 lines 3-5, and pg 4 paragraph 4 lines 4-5).

9.   In reference to claim 13, Morley teaches the method of claim 12, further comprising the

step of: f) selecting a path in an opposing direction for a Bi-directional Line Switch Ring (BLSR)

(pg 1 paragraphs 2-3, pg 2 paragraph 1 lines 13-14 and paragraph 5 lines 1-3, and pg 3 paragraph

1 lines 1-4 and paragraph 3 lines 3-5).

10.   In reference to claim 14, Morley teaches the method of claim 13, further comprising the

step of: g) repeating steps b) through e) (pg 1 paragraphs 2-3, pg 2 paragraph 1 lines 13-14 and

paragraph 5 lines 1-3, and pg 3 paragraph 1 lines 1-4 and paragraph 3 lines 3-5).

11.   In reference to claim 15, Morley teaches the method of claim 12, further comprising the

step of: h) adjusting said threshold level incrementally (pg 4 paragraphs 1-3 and pg 5 paragraphs

2-3).

12.   In reference to claim 16, Morley teaches the method of claim 15, further comprising the

step of: i) repeating steps a) through h) (pg 1 paragraphs 2-3, pg 2 paragraph 1 lines 13-14 and

paragraph 5 lines 1-3, and pg 3 paragraph 1 lines 1-4, paragraph 3 lines 3-5, pg 4 paragraphs 1-3

and pg 5 paragraphs 2-3).

13.   In reference to claim 17 Morley teaches a computer readable medium storing a software

program that causes a computer to perform a method comprising the steps of:

        determining a first circuit path between a source node and a destination node in a

Synchronous Optical Network (SONET) ring comprising a plurality of nodes interconnected by

links, each of said links having associated with it a plurality of facilities, each of said facilities

having associated with it a respective bandwidth utilization level, said facilities having

bandwidth utilization levels exceeding a first threshold level are not used to define said first

circuit path (pg 1 paragraphs 2-3, pg 2 paragraph 1 lines 13-14 & paragraph 5 lines 1-3, and pg 3

paragraph 1 lines 1-4 & paragraph 3 lines 3-5, and pg 4 paragraph 4 lines 4-5).

14.   In reference to claim 18, Morley teaches the method of claim 17, further comprising the

step of:

selecting a second circuit path in the opposing direction to said first circuit path where

facilities having bandwidth utilization levels below a first threshold level in said first path can

not be found for a Bi-directional Line Switched Ring (BLSR) (pg 1 paragraphs 2-3, pg 2

paragraph 1 lines 13-14 and paragraph 5 lines 1-3, and pg 3 paragraph 1 lines 1-4 and paragraph

3 lines 3-5).

15.   In reference to claim 19, Morley teaches the method of claim 17, further comprising the

step of: Adjusting said threshold level where the bandwidth utilization levels of facilities in said

second path exceed said first threshold level (pg 4 paragraphs 1-3 and pg 5 paragraphs 2-3).

16.   In reference to claim 20, Morley teaches the method of claim 19, further comprising the

step of: repeating the step of determining (pg 1 paragraphs 2-3, pg 2 paragraph 1 lines 13-14 and

paragraph 5 lines 1-3, and pg 3 paragraph 1 lines 1-4 and paragraph 3 lines 3-5).

17.   In reference to claim 21 Morley teaches an comprising:

An element manager, for determining a first circuit path between a source node and a

destination node in a Synchronous Optical Network (SONET) ring comprising a plurality of

nodes interconnected by links, each of said links having associated with it a plurality of facilities,

each of said facilities having associated with it a respective bandwidth utilization level, said

facilities having bandwidth utilization levels exceeding a first threshold level are not used to

define said first circuit path (pg 1 paragraphs 2-3, pg 2 paragraph 1 lines 13-14 & paragraph 5

lines 1-3, and pg 3 paragraph 1 lines 1-4 & paragraph 3 lines 3-5, and pg 4 paragraph 4 lines 4-5).

18.   In reference to claim 22, Morley teaches the apparatus of claim 21, wherein:

In the case of no facilities within said links being below said utilization level, selecting a

balanced path in the opposite direction to said first path direction for a Bi-directional Line

Switched Ring (BLSR) (pg 1 paragraphs 2-3, pg 2 paragraph 1 lines 13-14 and paragraph 5 lines

1-3, and pg 3 paragraph 1 lines 1-4 and paragraph 3 lines 3-5).

19.   In reference to claim 23, Morley teaches the apparatus of claim 21, wherein:

In the case no bandwidth utilization level of said facilities within said links being below

said threshold level in said opposing direction to said first path, adjusting said threshold level (pg

4 paragraphs 1-3 and pg 5 paragraphs 2-3).

20.   **Claims 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over**

Morley et al. (CCBR, Optimal Loading of SONET BLSRs, June 1998) in view of Wan et al.

(IEEE, Load Balancing in Counter Rotated SONET Rings, September 1999).

21.   In reference to claim 4, Morley teaches the method of claim 2. Morley fails to explicitly

teach wherein said first circuit path is a short path. Morley does teach routing demand in either a

clockwise or counter-clockwise direction in a ring network (pg 1 paragraph 3, pg 2 paragraph 1

lines 13-14, and pg 3 paragraph 1 lines 1-4 & paragraph 3 lines 3-5). However, Wan teaches

optimal load balancing transmissions in a SONET ring network between source and destination

nodes (see Abstract). Wan discloses short-way routing where a circuit path is a short path

(column 2 paragraph 1, column 14 paragraph 4 and figure 1).

It would have been obvious to one having ordinary skill in the art to combine Morley with Wan by specifying that the first path is a short path as per the teachings of Wan. One would be motivated to do so since short-way routing achieves optimal load balancing between source and destination nodes.

22.   In reference to claim 5, Morley teaches the method of claim 2. Morley fails to explicitly teach wherein said second circuit path is a long path. Morley does teach routing demand in either a clockwise or counter-clockwise direction in a ring network (pg 1 paragraph 3, pg 2 paragraph 1 lines 13-14, and pg 3 paragraph 1 lines 1-4 & paragraph 3 lines 3-5). However, Wan teaches optimal load balancing transmissions in a SONET ring network between source and destination nodes (see Abstract). Wan discloses a routing path as a long path (column 2 paragraph 1, column 14 paragraph 4). Wan also illustrates that a request can be routed around a ring in a clockwise direction over a short path, or it can be routed around a ring in a counterclockwise direction over a long path (figure 1).

It would have been obvious to one having ordinary skill in the art to combine Morley with Wan by specifying the second circuit path as a long path as per the teachings of Wan. One would be motivated to do so since the opposite direction of a clockwise short path in a ring network is a counter-clockwise long path.

23.   **Claims 6 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Morley et al. (CCBR, Optimal Loading of SONET BLSRs, June 1998) in view of Budka (U.S. Patent No. 6,014,567).**

24.   In reference to claim 6, Morley teaches the method of claim 3. Morley fails to explicitly

teach wherein personnel are notified of a lack of facilities. However, Budka teaches detection

and notification of load imbalances in a communication network (see Abstract). Budka discloses

sending messages to terminals (which can be personnel terminals) indicating line congestions so

that demand can be allocated to uncongested lines (see Abstract, column 3 lines 50-67 and

column 4 lines 1-28).

It would have been obvious to one having ordinary skill in the art to modify Morley by

sending notifications that will show that a line is congested and cannot support anymore load as

per the teachings of Budka. One would be motivated to do so, so that demand can be allocated to

uncongested lines by the terminals whenever alerted by the notification.

25.   In reference to claim 11, Morley teaches the method of claim 7. Morley fails to explicitly

teach wherein personnel are notified of a lack of facilities. However, Budka teaches detection

and notification of load imbalances in a communication network (see Abstract). Budka discloses

sending messages to terminals (which can be personnel terminals) indicating line congestions so

that demand can be allocated to uncongested lines (see Abstract, column 3 lines 50-67 and

column 4 lines 1-28).

It would have been obvious to one having ordinary skill in the art to modify Morley by

taking an action that will show that a line is congested and cannot support anymore load as per

the teachings of Budka. One would be motivated to do so, so that demand can be allocated to

uncongested lines by the terminals whenever alerted by the notification.

(10) Response to Argument

26.   The examiner summarizes the various points raised by the appellant and addresses

replies individually.

27.   As per appellants arguments filed on November 22, 2004, the appellant argues that

Morley fails *to teach, show or suggest at least determining a first circuit path between a source*

node and a destination node comprising links, each of the links comprising at least one facility,

wherein facilities having a respective bandwidth utilization level above a first threshold level are

not used to define the first circuit (see pgs 15-16, argument A).

          In reply, Morley does teach *a first circuit path between a source node and a destination*

node comprising links, (Morley states that demand (signals) are routed "between a pair of nodes

in either one or the other direction" (see pg 2, lines 13-14). Morley calls the *links* of the appellant

as "spans" (see pg 2, section 2.1, line 2). It is seen that a span connects two nodes (which are

inherently source and destination nodes)).

          Morley does teach that *each of the links comprising at least one facility* (pg 2 paragraph 1

lines 13-14, pg 3 paragraph 1 lines 1-4 and pg 4 paragraph 4 lines 4-5, Morley states that each

span can be a four fiber BLSR span. The four fibers (i.e. *facilities*) also have a capacity c because

the fibers define the span),

          Morley also teaches *wherein facilities having a respective bandwidth utilization level*

above a first threshold level are not used to define the first circuit, (pg 1 paragraph 3, pg 2

paragraph 1 lines 13-14, Morley states "transport signals may be routed in either direction

around the ring provided that the total load on any span does not exceed its line capacity c" (see

pg 3, lines 2-3). This means that any span that has a total load (*bandwidth*) above a line capacity

c (i.e. *threshold level*) is not used to define the transmission path.)

28.   The appellant further argues that Morley fails to teach *the facilities comprising a*

respective link are assigned ***a user defined threshold level (bandwidth utilization threshold) of a***

total bandwidth of a link, which is then ***checked against a preset threshold value and if the***

bandwidth utilization level of that facility exceeds the preset threshold, then the facility is not

used to complete the selected path (see pg 17, argument A).

        In reply, this argument is not persuasive because as explained in the Advisory action

dated July 23, 2004, claim 1 (and any of the subsequent claims) fails to explicitly mention these

features which the appellant bases the argument on. Particularly, ***"user defined threshold level"***

and ***"preset threshold"*** are not in the claim. The claim only mentions a *bandwidth utilization*

level of a link.

29.   The appellant further argues that because Morley does not anticipate appellants invention

as recited in independent claim 1, then dependent claims 2,3,8-10,13-16,18-20 and 22-23 are also

not anticipated by Morley (see pg 22 argument B, pg 23 argument C, pg 24 argument E, pg 26

argument G, pg 27 argument J and pg 28 argument L).

        In reply, Morley does anticipate claim 1 as outlined above , and therefore dependent

claims 2,3,8-10,13-16,18-20 and 22-23 are subsequently anticipated by Morley.

30.   The appellant further argues that independent claims 7,12,17 and 21 recite limitations

similar to those recited in independent claim 1, and are also not anticipated by Morley for the

reasons stated in section A (see pg 24 argument D, pg 25 argument F, pg 26 argument H and pg 28 argument K).

In reply, Morley does anticipate claim 1 as outlined above , and therefore independent claims 7,12,17 and 21 are subsequently anticipated by Morley.

31.   Appellant further argues that because Wan alone does not teach the invention of appellants claim 1, then Wan does not teach claims 2,4 and 5 (pgs 30-31, argument A).

In reply, Wan was never used as an independent reference to reject claims 1,2,4 and 5. Claims 1 and 2 were rejected under 35 U.S.C. 102(b) as being anticipated by Morley (see paragraphs 2-3 above). Claims 4 and 5 were rejected under 35 U.S.C. 103(a) as being unpatentable over Morley in view of Wan (see paragraphs 6-7 above).

32.   Appellant further argues that there is no suggestion or motivation to combine the teachings of Morley and Wan and that claims 4 and 5 are not rendered obvious by the teachings of Morley and Wan (see pgs 31-32, argument A).

In reply, appellant failed to explicitly explain why Wan fails to teach the deficiencies of Morley. Appellant merely states that Morley and Wan fail to teach claim 1. However, Morley does teach claim 1 as outlined above. Morley further teaches that in a ring network the demand is routed either clockwise or counter-clockwise over a span, depending on the span load not exceeding capacity c (see pg 3 lines 2-3 & lines 14-15).

Morley fails to explicitly teach where the first path is a short path and a second path is a long path. However, Wan teaches that it is inherent in a ring network for demand to be routed via a short path or a long path (see column 2 paragraph 1 and column 14 paragraph 4). Wan illustrates that the short path is routing in a clockwise direction and that the long path is routing

in counter-clockwise direction (see figure 1). Therefore it would be obvious for one of ordinary

skill in the art to make a combination of Morley and Wan where the clockwise routing of Morley

is the short path of Wan and that the counter-clockwise routing of Morley is the long path of

Wan, since these are inherent features of a ring network (i.e. demand can be routed either

clockwise (in this case short path) or counter-clockwise (in this case long path).

33.   Appellant further argues that the exact publication date of Wan is not properly cited

although requested and Wan may not be a proper reference to cite as prior art (see pg 32,

argument A).

        In reply, Examiner clearly stated the publication date on page 7 paragraph 20 in the Final

Office Action dated April 20, 2004. Examiner stated: "On document form PTO-892 examiner

cited the publication date of Wan as 1999, which is before applicants filing date of 9/28/2000.

Furthermore, as was included with the Wan reference, http://ieeexplore.ieee.org cites the Wan

reference with Meeting Date: 9/21/1999 – 9/24/1999 and Publication Date: 1999."

34.   Appellant further argues that because Budka alone does not teach the invention of

appellants claim 1, then Budka does not teach claims 3,6,7,10 and 11 (pg 33, argument B).

        In reply, Budka was never used as an independent reference to reject claims 3,6,7,10 and

11. Claims 3,7 and 10 were rejected under 35 U.S.C. 102(b) as being anticipated by Morley (see

paragraphs 2 and 4 above). Claims 6 and 11 were rejected under 35 U.S.C. 103(a) as being

unpatentable over Morley in view of Wan (see paragraph 9 above).

35.   Appellant further argues that there is no suggestion or motivation to combine the

teachings of Morley and Budka (see pgs 34-35, argument B).

In reply, Appellant fails to explicitly explain why Budka fails to teach the deficiencies of Morley. Appellant merely states that Morley and Budka fail to teach claims 1 and 7. However, Morley does teach claims 1 and 7 as outlined above. Morley further teaches when a load on a span exceeds its line capacity then that span is not chosen for routing (see pg 3 lines 3-4). This means that the span is congested and will not be used.

Morley fails to explicitly teach wherein personnel are notified of lack of facilities (i.e. transmission lines/spans). However, Budka teaches sending messages to terminals (which can be personnel terminals) indicating line congestions so that demand can be allocated to uncongested lines (see Abstract, column 3 lines 50-67 and column 4 lines 1-28). It would have been obvious for one of ordinary skill in the art to modify Morley by sending notification indicating congested lines to personnel terminals as per the teachings of Budka. One would be motivated to do so, so that demand can be allocated to uncongested lines by the terminals whenever alerted by the notification.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

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